Kiowa Warrior Cockpit and Sensor Upgrade Program (CASUP)

What is it?

The OH-58D Kiowa Warrior is the currently fielded variant of the OH-58D-series helicopters manufactured by Bell Helicopter Textron, Inc. that entered service in 1985. It is a single-engine, four-bladed, reconnaissance and attack helicopter that can be armed with a .50 caliber machine gun, 2.75 inch rockets and Hellfire missiles. It was designed to satisfy an Army requirement to provide armed reconnaissance, security and target acquisition functions. The Kiowa Warrior operates throughout the full spectrum of warfare, from stability and support operations to major combat operations and is the Army's primary armed reconnaissance helicopter in operations throughout the world. The Kiowa Warrior has the capacity to conduct armed reconnaissance, security, close combat attacks, and interdiction attacks in day and night conditions. The aircraft has seen several modifications throughout its service life, beginning with its birth from the OH-58A/C; including upgrades to the Mast Mounted Sensor (MMS), Control and Display System (CDS), armament systems, as well as the Fully Automatic Digital Engine Control (FADEC) system.

The OH-58D Kiowa Warrior CASUP answers the need within the Kiowa Warrior community for replacement of legacy systems that have not kept pace with current technological capability or the requirements of today's fight. The CASUP program specifically addresses upgrades to sensor capabilities and modernizing the cockpit, as well as other major end items; specifically, the FADEC system, Condition Based Maintenance (CBM), integrated communications, Aircraft Survivability Equipment (ASE), and digital MIL-STD-1760 weapons interface. Once completed, the CASUP Kiowa Warrior will be the new baseline for the fleet, providing a common platform with the capabilities required to continue operating on the modern, digital battlefield.

What has Army Aviation Done?

Since the beginning of Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF), Kiowa Warrior has flown over 500,000 combat hours with an average mission capable rate of 83.9 percent and an OPTEMPO of 67.5 hours per airframe per month. Forty-nine percent of the Kiowa fleet started life as an OH-58A or OH-58C Kiowa Scout and was converted during the Army Helicopter Improvement Program (AHIP), then converted again to the armed Kiowa Warrior configuration. The oldest base airframe started life as an OH-58A in June 1969 and is now 40 years old, making the average fleet age 35.6 years old. The Kiowa Warrior has suffered the second highest number of combat losses in Army Aviation since October 2001 with 30 aircraft lost during combat operations in OIF/OEF and seven non-combat losses. The fleet had a total of 338 flyable aircraft as of April 20, 2009, with a Modified Table of Organization and Equipment (MTOE) and Table of distribution and Allowance (TDA) requirement of 368 airframes.

What continued efforts does Army Aviation have planned for the future?

Since the Kiowa Warrior has lagged behind in needed upgrades and modernization in recent years, and given the age and fatigue of the fleet, CASUP will provide breath and life to the Kiowa Warrior and make it an even more effective weapon system. CASUP will replace the aging MMS with the Nose Mounted Sensor (NMS) which will put Kiowa on par with the Apache sensors. It will provide an improved operations tempo

(OPTEMPO) and safety margin with CBM and dual-channel FADEC, and the improved Control and Display System (CDS-5) will provide the aircrew with enhanced situational awareness with a more modern, fully integrated cockpit to include three color-multifunction displays. The Kiowa Warrior CASUP will also incorporate greater survivability with the Common Missile Warning System (CMWS), and a lighter, more effective weapons suite. CASUP revitalizes the aircraft and gives the Kiowa Warrior pilot a modern, more capable aircraft. The CASUP fielding schedule is provided below.

- Safety Enhancement Program (CDS-4 Block II) will be complete in the third quarter of FY11.
- M3P >50 Caliber Machine Gun is currently being fielded.
- Improved Repairable/Light Weight Armor will begin fielding the second quarter of FY10.
- Lightweight Color Capable MFDs will begin fielding the third quarter of FY10.
- Federated CBM will begin fleet installs the second quarter of FY10.
- Federated CMWS will begin fleet installs the third quarter of FY10.
- Nose Mounted Sensor/CDS-5 testing will begin the third quarter of FY10.
- Nose Mounted Sensor/CDS-5 modifications will begin the fourth quarter of FY12.

(Note - The Nose Mounted Sensor will be Government Furnished Equipment (GFE) using the AN/ASS-52 Common Sensor Payload (CSP)).

Why is this important to the Army and Army Aviation?

While the Kiowa Warrior's mission envelope has increased greatly over time, the systems and airframe have remained static since 1993, with the last major upgrade to the Mast Mounted Sight optics. CASUP not only gives the aircrew improved capability and survivability, it gives the ground commander the benefit of these improvements by providing greater lethality, interoperability and the cornerstone mission of greater situational awareness in the reconnaissance role. With manned-unmanned teaming and beyond line of sight radios, our ground forces will literally see what the pilot sees and can communicate throughout the entire breadth of the battlefield. The benefits provided by the Kiowa Warrior can be measured in the engagements it has endured in support of the ground troops, and the lives it has saved beneath it. It has always flown to the sound of the guns and will continue to do so into the future. The CASUP program will ensure that the Kiowa Warrior is not outpaced by fatigue and obsolescence.

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